

conception of the function of the spleen as an organ, as well as in the lack of knowledge concerning the activities of the individual portion of its tissues. This ignorance permits of wide speculation on the part of many observers, a feature which has been taken advantage of by not a few advancing hypotheses difficult of proving or disproving. As is pointed out by EVANS (*Johns Hopkins Hospital Bulletin*, xxvii, 356) there is no thorough agreement upon the nature of the various cell elements present in the normal spleen. To what extent the spleen pulp is active as a hemopoietic organ, what is the nature of the large endothelial cell of the sinuses and what is the relationship between the endothelial cell of the Malpighian body, of the vascular spaces, and of histogenous origin, are questions which require further study. Evans has made a study of the splenic tissues under conditions of various infections. He points out that the reactions may be broadly grouped into two classes of splenic enlargement: (1) with red pulp substance; (2) with gray pulp substance. It is interesting that these groups are fairly sharply defined by the nature of the infection. The red type of the reaction is an acute splenitis found particularly in typhoid fever and its allied diseases; the gray variety is associated with infections by the pneumococcus, staphylococcus and the various streptococci. These splenic reactions are to be recognized in the gross, the red variety being the large spleen with tense capsule and soft, almost diffuent pulp. In it the Malpighian bodies are obliterated. The gray variety shows moderate enlargement with a pulp substance which, though soft, is never diffuent. The pinkish-gray color is uniformly diffused through the tissue and the Malpighian bodies are not to be seen. The types are also distinct on histological examination. The reaction in the red variety consists mainly of engorgement of the splenic sinuses accompanied by a hyperplasia of the endothelial cells of the pulp. In the gray variety more or less congestion may be present but the tissue reaction is distinctly different from the above. In place of the endothelial proliferation of the pulp there is an accumulation of polymorphonuclear leukocytes and other oxydase-containing cells as well as a fair number of lymphocytes. To observe the more or less specific splenic response to particular infections, Evans studied the spleen of rabbits inoculated with a variety of *B. typhi* murium and the pneumococcus. Although the reactions were not so prominent and individual as they are in man, a similarity in the reaction was nevertheless observed. The author points out that although the two types of splenic tumor appear quite distinctive, it is not to be inferred that single varieties of cell elements alone respond in either.

The Oxidizing Ferment of the Myelocyte Series of Cells and its Demonstration by an Alphanaphthol-pyronin Method.—Classifications of the white cells of the blood we have in plenty. The difficulty which confronts the microscopists is the certain recognition of the cells belonging to individual groups. It is true that under normal conditions or common pathological states this difficulty is not so great, but in certain blood diseases the classification of the cells appearing in the blood stream is no easy matter. By the ordinary methods of staining there is little opportunity to indicate the exact nature of the cells spoken of as

myeloblasts and their differentiation from lymphogenous cells is not certain. It has been shown by Winckler, Brandenburg and others that lymphocytes and their accestral cells are devoid of oxidizing ferments while the cells of myelogenous origin commonly contain it. However, even at the present time it is not clear whether the cells in all stages in the development of leukocytes are oxydase-containing. Nevertheless a positive reaction for oxydase within white cells of the blood is accepted as sufficient evidence for excluding them from the lymphogenous series. Various reagents have been used for this demonstration of this intracellular ferment. The guaiac test has been replaced by a more precise method whereby indophenol resulted from the interaction of oxydase upon alphanaphthol and dimethylparaphenylenediamine. This latter method has been in common use and has given, as demonstrated in the work of Evans, a new understanding to many cells in the circulation and in the hemopoietic organs under pathological conditions. One difficulty in making use of the diamine test has been in the transient nature of the reaction. The coloration of the oxydase granules is best observed within a few minutes after the application of the test solutions, from which time a rapid fading takes place. Furthermore, the diamine compound is very expensive and when made up in solution for use, lasts only a few days. GRAHAM (*Jour. Med. Res.*, xxxv, 231) has brought forward an excellent and inexpensive substitute for the demonstration of oxydase granules. He has tested his method upon blood smears as well as upon formalin-fixed tissues. The results have been very satisfactory. By this method the cells are treated with an old solution of alphanaphthol (or by a solution ripened with hydrogen peroxide) and after washing are then stained with an aniline-pyronin solution. The oxydase granules are sharply differentiated by the pyronin staining and are quite permanent. This new method should find a wide application and permit of a better classification of the indefinite white cells of the blood.

The Etiology of Scarlet Fever.—MALLORY and MEDLAR (*Jour. Med. Res.*, xxxv, 209) have found a microorganism in association with pathological changes of the respiratory tract in scarlet fever, which they believe is of etiological significance. The microorganism is a Gram-positive bacillus belonging to the indefinite diphtheroid group. The exact biological characteristics of the organism for comparison with other members of this group have, as yet, not been determined. The bacillus was isolated from the faucial tissues in 5 cases of scarlet fever. No conclusive results were obtained by means of the complement-fixation test nor by animal experiment by the use of this microorganism. The authors place much importance upon the presence of morphologically similar organisms present upon the epithelial surfaces of the pharynx and respiratory tract in cases dead of scarlet fever. They do not, however, make any positive claim for this organism as the cause of scarlet fever.

Primary Carcinoma of the Ureter.—SCHMITT (*Jour. Cancer Research*, i, 461) has collected all the undoubted cases of primary carcinoma of the ureter, beginning with the first reported by Wising and Blix in 1878. Spies, in 1915, published a very complete review including